



Melaleuca Eradication and Other Exotic Plants – Implement Biological Controls

John Morgan
South Florida Water Management District

Shauna Allen
U.S. Army Corps of Engineers



US Army Corps
of Engineers



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Recommended Plan

- **Construct mass rearing lab annex for USDA Quarantine Facility at Davie, FL**
 - **Cost**
 - Initial – \$1,863,000
 - Annual - \$105,000
- **Implement adaptive management strategy with variable bio-control production and release intensity**
 - Inoculate all infested cells with approved biological control agents for Melaleuca and Australian Pine
 - Inundate all infested cells with approved biological control agents for Brazilian pepper and Old World climbing fern
 - **Cost**
 - Annual \$465,000

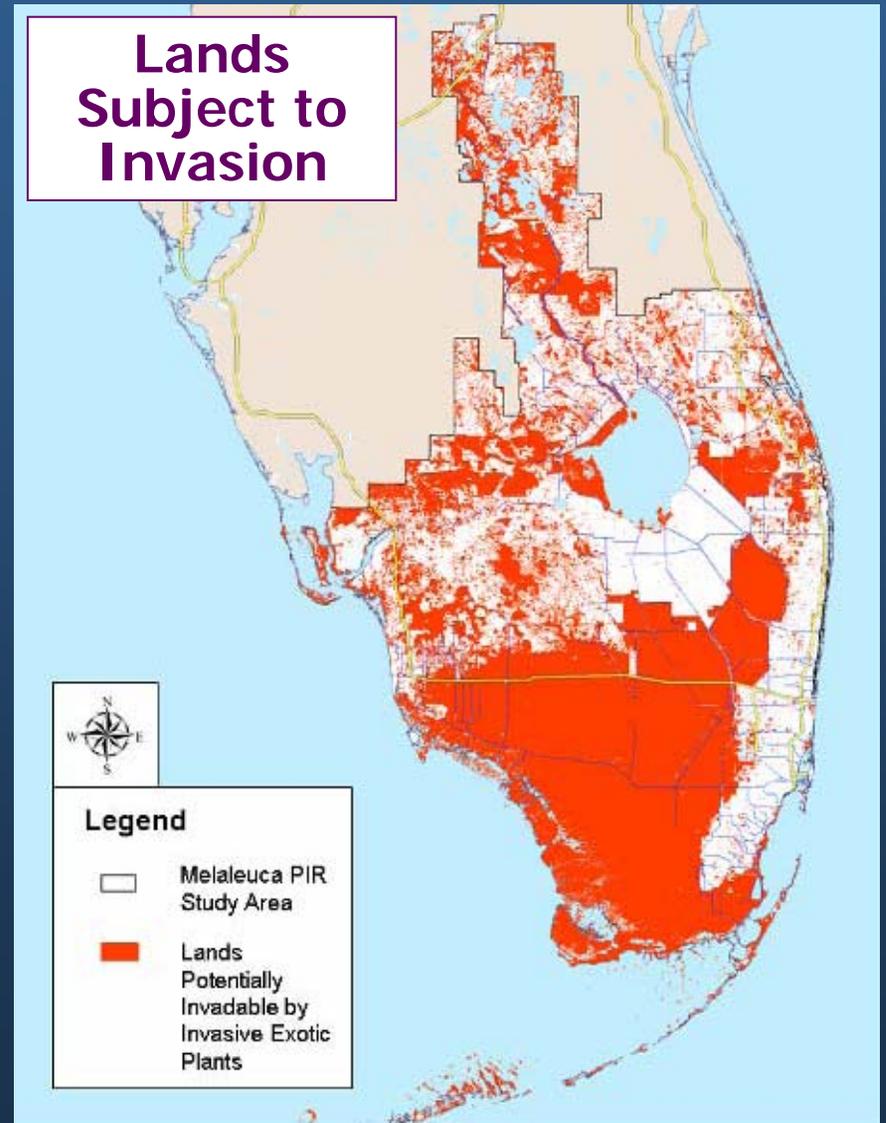


Project Study Area and Lands Subject to Invasion

Study Area

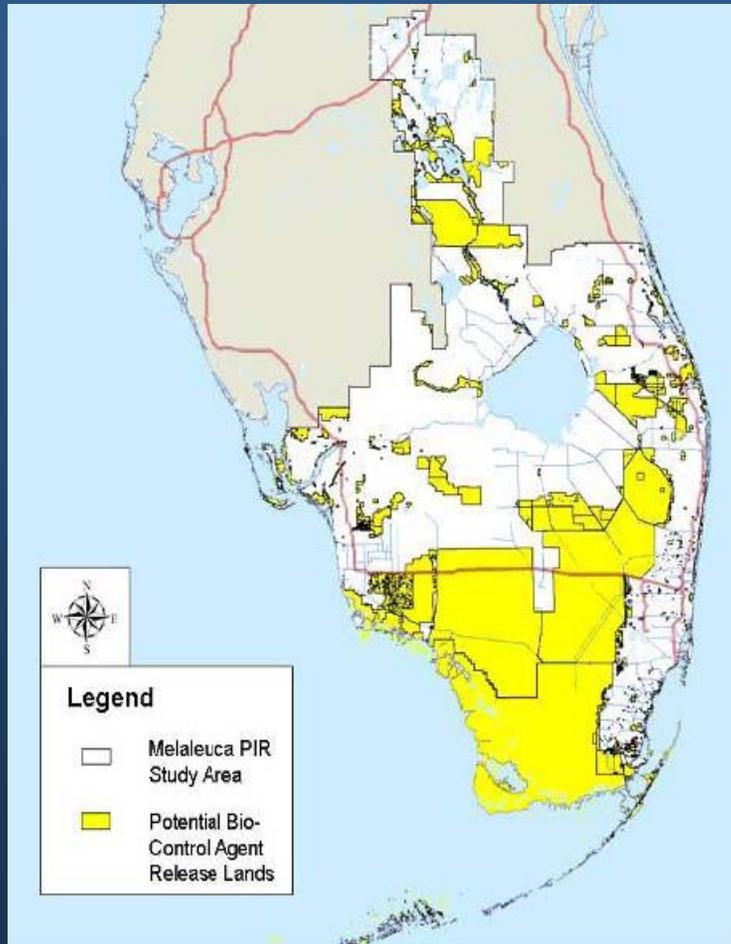


Lands Subject to Invasion





Potential Biological Control Release Areas



- Release sites only on public land
- Exotics on private lands may be affected
- It is illegal to purchase or sell target species



Project Purpose

Section 601 of WRDA 2000:

“This project calls for the mass rearing, field release, establishment and field monitoring of approved biological control agents for Melaleuca and other exotic plants.”



Yellow Book Features

Component	Status
Part 1 - Renovation of existing facility at University of Florida in Gainesville	Complete State implemented repairs to this facility out of their own funds.
Part 2 – Mass rearing, field release, establishment, and field monitoring of approved biological control agents for <i>Melaleuca</i> and other invasive exotic species	In Progress Subject of this PIR



Formulation Approach: Reaffirmation

- Project included in Yellow Book
- Needs, objectives, problems, opportunities have not changed
- No new purpose/scope added
- Did not expand upon the intent described in the CERP

Realizing the full benefits possible from the increased capacity provided by the new quarantine facility requires implementation of Part 2 of the Yellow Book plan.





Problems and Opportunities

- Long-term impacts to ecosystem function
- Reduction of biodiversity, habitat and native wildlife and plant species
- Increased costs for land management, navigation and flood control
- Opportunity to improve ecosystem stability and resilience
- Opportunity to increase control and prevent reinvasion in ecologically sensitive areas
- Reduce long-term maintenance costs and dependence on herbicides





Planning Objectives and Constraints

- Reduce exotic plant reproductive capacity within 10 to 20 years
- Reduce exotic plant densities
- Increase exotic seeding mortality rate
- Use only approved biological control organisms (those permitted by USDA)



Initial Array of Alternatives

Alternative Plan	Factor 2			Factor 3			Factor 1	
	Release approach			Infestation level of treated cells			Rearing Annex	
	Inoculative	Inundative	High Density	Moderate	Dense	All	With	Without
1								X
2	X					X		X
3	X					X	X	
4	X				X			X
5	X				X		X	
8		X				X		X
9		X				X	X	
10		X			X			X
11		X			X		X	
12		X		X				X
13		X		X			X	
15			X			X		X
16			X			X	X	
17			X		X			X
18			X		X		X	
19			X	X				X
20			X	X			X	



Final Array of Alternatives

	Alternative 1 (no action)	Alternative 3	Alternative 9	Alternative 16
Release approach	None	Inoculative	Inundative	High Density
Infestation level of treated cells		All	All	All
Time to establishment	> 50 years	6 years	8 years	11 years
Time to saturation	> 50 years	12 years	8 years	11 years
Time to full benefits	> 50 years	19 years	13 years	14 years



Recommended Plan – Biocontrol Implementation

Alternative 3

Melaleuca



Australian pine



Alternative 9

Lygodium (Old World climbing fern)



Brazilian pepper





Biological Control Agents Approved or in the "Pipeline"

- Melaleuca – 4 approved, 2 in process
- Lygodium – 3 approved, 2 in process
- Brazilian Pepper – 1 approved, 2 in process
- Australian Pine – 1 in process



Project Implementation

- **Draft PIR/EA public review: December 2008-January 2009**
- **Final PIR/EA completed: July 2009**
- **Begin Design: January 2010**
- **Begin Construction: September 2011**
- **Begin Implementation: June 2012**



Project Costs – Recommended Plan

Total Estimated Project Cost: \$16,671,000

- Implementation and Monitoring – \$ 12,844,000
- Rearing Lab Annex Construction – \$ 1,557,000
- Non-Construction Costs - \$2,270,000
 - Project Implementation Report
 - Planning, Engineering, Design
 - Supervision & Administration

Yellow Book Estimated Cost: \$ 10,800,000

(October 1999 price from Yellow Book)